## REMARKS

In the Office Action, the Examiner rejected Claims 1-18, which are all of the pending claims, under the doctrine of obviousness-type double patenting. Claims 1-10 were further rejected under 35 U.S.C. 103 as being unpatentable over U.S. Patent 5,777,773 (Epworth) in view of U.s. Patents 6,222,861 (Kuo, et al.) and 6,535,532 (Ackerman, et al.). The Examiner indicated that Claims 11-18 are allowable if the double patenting rejection is overcome.

With respect to the double patenting rejection, Claims 1-18 were rejected as being unpatentable over claims in each of the following:

U.S. patent applications nos. 09/865,256, 09/964,190, 09/975,266, 09/963,258, 09/944,271, 09/893,125 and 09/976,542; and

U.S. Patents 6,738,187, 6,643,424, 6,751,014, 6,724,786, 6,674,936, 6,654,152, 6,597,840 and 6,816,517.

it is believed that these amendments overcome the double patenting rejections of Claims 1-10 and the rejections of these claims under 35 U.S.C. §103. The examiner is thus asked to reconsider and to withdraw these rejections of Claim 1-10, and the allow these claims. In addition, the double patenting rejections of Claims 11-18 are respectfully traversed; and the Examiner is also requested to reconsider and to withdraw these rejections, and to allow Claims 11-18.

The present invention, generally, relates to a method and system for narrowing the pulse widths of electromagnetic signals such as lasers. Although it is not intuitive, a Gaussian bandpass filer can be used to narrow a laser pulse bandwidth. This is done by passing the laser

through the filter, with the center of the laser wavelength aligned with the center of the filter pass band.

The filter reduces the laser pulse width because both the laser pulse shape and the filter response are Gaussian shaped in both time and frequency domain. Passing the laser light through such a filter results in the convolution of two Gaussian pulses, which itself is a Gaussian pulse with narrower width.

The prior art of record does not disclose or suggest the use of a wavelength locked feedback loop for maintaining alignment of the center of the electromagnetic signal wavelength with the center of the filter passband for purposes of reducing the pulse width of the electromagnetic signal.

For instance, Epworth discloses a method and system for controlling the frequency of a laser in an optical transmission system. The laser output is controlled by controlling the laser temperature and current. The laser temperature and current, in turn, are controlled by means of a feed-back loop.

Kuo, et al. also discloses a procedure for controlling the wavelength of a laser. Ackerman, et al describes a procedure for adjusting a laser current. The current can be adjusted to enable the laser to operate over a wide range of channels.

None of these references, though, addresses the problem of how to reduce the laser pulse width. Thus, none of these references suggest a solution for that problem.

The present invention, in contrast, addresses and effectively solves this problem.

Independent Claims 1 and 6 clearly describe differences between the claims and the prior art. Specifically, both of these claims describe the feature that the electromagnet signal is applied to a wavelength selective device to narrow the pulse width of the electromagnetic signal.

Both of these claims also describe a feedback signal that is used to align the center wavelength of the electromagnetic signal with the center wavelength of the wavelength selective device.

These features are of utility because, as explained in detail in the present application, they, in combination, may be used to overcome the dispersion limits of high speed optical data links.

The other reference of record have been reviewed, and it is believed that these other references, whether considered individually or in combination, are no more pertinent that Epworth, Kuo, et al. or Ackerman, et al. In particular, these other references also do not teach the use of a wavelength locked feedback loop for maintaining alignment of the center of the electromagnetic signal wavelength with the center of the filter passband for the purpose of reducing the pulse width of the electromagnetic signal.

Because of the above-discussed differences between Claims 1 and 6 and the prior art, and because of the advantages associated with those differences, these claims patentably distinguish over the prior art and are allowable. Claims 2-5 are dependent from Claim 1 and are allowable therewith; and Claims 7-10 are dependent from, and are allowable with, Claim 6. The Examiner is, accordingly, asked to reconsider and to withdraw the rejection of Claims 1-10 under 35 U.S.C. §103.

The double patenting rejections of Claims 1-10 are respectfully traversed because the claims of the cited applications and patents also do not render obvious the use of a feedback loop, as described in independent Claims 1 and 6, for maintaining the above-described alignment between the center wavelengths of the electromagnetic signal and of the wavelength selective device that is used to narrow the pulse width of the electromagnetic signal.

More specifically, the patents and patent applications cited by the Examiner in the double patenting rejections include claims that describe a feedback loop, sometimes referred to as a wavelength locked loop. Claims 1-10 of this application describe the use of that loop for a unique and non-obvious function – for the purpose of maintaining alignment of the wavelengths such that the wavelength selective device effectively narrows the pulse width of the electromagnetic signal. This feature, as mentioned above, is important because it, in combination with the other features expressly described in independent Claims 1 and 6 may be used to overcome the dispersion limits of high speed optical data links.

With respect to Claims 11-18, the double patenting rejections of these claims are respectively traversed because the cited claims do not render obvious the compression subcircuit described in independent Claims 11 and 15 of this application. Here too, it may be noted that the cited claims describe wavelength locked loops, but those claims do not describe or suggest the use of a pair of dispersion mechanisms and a spectral filter, as described in Claims 11 and 15 for spreading the spectrum of the electromagnetic signal and then adjusting that spectrum to implement a peaked passband function. As it is believed the Examiner has recognized, these features, in the contexts of Claims 11 and 15, is useful because they help to produce the narrower optical output pulses.

For the reasons discussed above, the Examiner is respectfully requested to reconsider and to withdraw the double patenting rejections of Claims 1-18, to reconsider and to withdraw the rejection of Claims 1-10 under 35 U.S.C. 103, and to allow Claims 1-18. If the Examiner

believes that a telephone conference with Applicants' Attorneys would be advantageous to the disposition of this case, the Examiner is asked to telephone the undersigned.

Respectfully submitted,

John S. Sensny

John S. Sensny
Registration No. 28,757
Attorney for Applicants

SCULLY, SCOTT, MURPHY & PRESSER
400 Garden City Plaza – Suite 300
Garden City, New York 11530
(516) 742-4343

JSS:jy/gc